FIELD MUSEUM STORIES

Pueblo Houses

Series XXXV, No. 1
October 5, 1940

Looseleaf No. 28

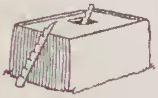
PUEBLO HOUSES

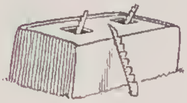
On the deserts and mesas of northern Arizona and New Mexico, the Pueblo Indians live in "apartment-house" towns called pueblos. They are farmers, growing crops of corn and beans and squash, as their ancestors did many years ago. In this dry country it is hard to make anything grow, and the people pray constantly for rain. In spring the desert is covered with grass and gay flowers, but by summer the heat of the sun has dried them up thoroughly. A few scrubby little trees and bushes are scattered here and there, and in the river valleys grow tall cottonwoods.

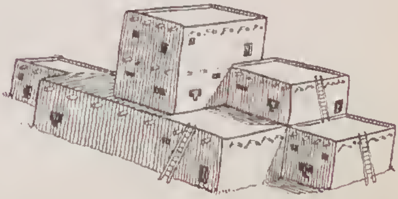
From the earth the Indians shape bricks to build their houses. They lay the mud bricks in the sun until they are baked hard and dry, and with these bricks they build the walls of their houses, plastering them with wet mud to make a smooth surface. Wooden beams are laid on top of the walls, for a roof. Then branches are spread over the beams and are covered with a thick layer of mud, well packed down.

Long ago the ancestors of these Indians lived in this same region and in southern Colorado and Utah. They, too, made their houses in the same way, but used stones for the walls instead of bricks. There were no doorways. To enter a house, the people climbed up a ladder onto the roof, then, through a hole in the roof, climbed down another ladder inside. There were no windows either. Fresh air came in through the roof-hole or through small holes made in the walls. The thick walls and the lack of windows kept the hot summer sun and the cold wintry winds from entering the house.

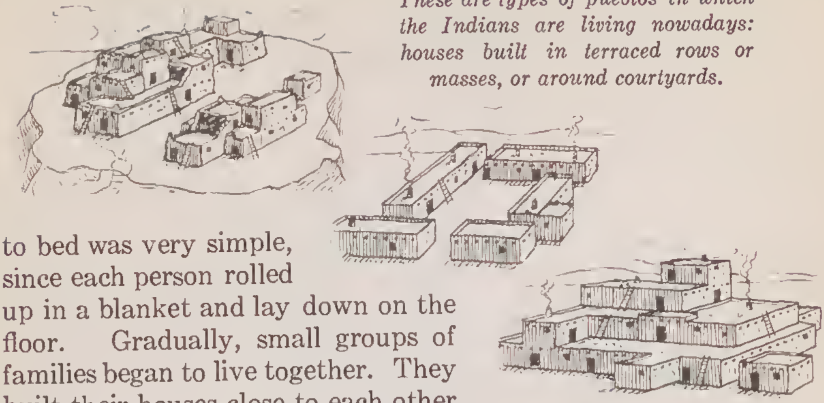
In earliest times, each Indian family lived in a separate house, maybe many miles away from the nearest neighbors. These were little one-room houses and the whole family—father, mother and all the children—lived in the one room. As there was no furniture everyone sat on the hard dirt floor. Going







These are pueblo houses showing how they developed gradually from one room to many rooms.



These are types of pueblos in which the Indians are living nowadays: houses built in terraced rows or masses, or around courtyards.

to bed was very simple, since each person rolled up in a blanket and lay down on the floor. Gradually, small groups of families began to live together. They built their houses close to each other in long rows. Later they built them on top of one another in terraced rows. It was easier for the peaceful Pueblos to defend large houses like these from the marauding tribes which occasionally descended upon them. But evidently even these houses were not always protection enough, so the people abandoned them and moved away to safer places. In some of the deep canyons they found caves in the sides of the cliffs, and in these caves they built the same kind of terraced house. To get up the steep cliff-sides they cut foot-holds in the rock or climbed ladders.

For many years the cliff-dwellers lived happily in their cave-apartments. They planted corn on top of the cliffs, and during the growing season the men climbed the cliffs to care for their crops.

Then came the Great Drought. For twenty-three years there was too little rain and the crops dried up and withered. The starving people left their cliff-houses and moved to the river valleys. They built new styles of pueblos, around open courtyards or in two rows with a street between them. But the old-fashioned type of pueblo remained popular, the houses in one big mass, and the upper stories terraced back from the lower ones.

The Pueblo Indians are still living in these houses. Nowadays screen doors keep out the flies, gaily colored curtains decorate the windows, and the women cook on real stoves instead of in fireplaces. But, in general, the Pueblos live much as their ancestors did, working in the fields and praying to the gods that their crops may grow.

Elizabeth McM. Hambleton
Raymond Foundation

Note: In Hall 7 are models of many different types of pueblos.

FIELD MUSEUM STORIES

The Pyramids of Mexico

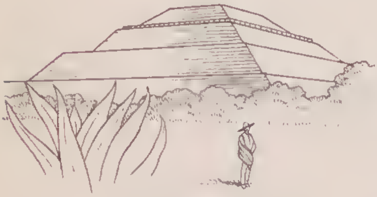
FIELD MUSEUM of NATURAL HISTORY
FOUNDED BY MARSHALL FIELD 1893
CHICAGO

Series XXXV, No. 2
October 12, 1940

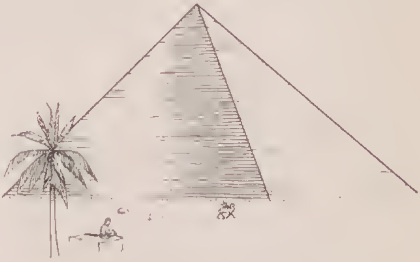
Looseleaf No. 29

THE PYRAMIDS OF MEXICO

In central Mexico are the ruins of great pyramids, built by tribes of Indians who lived there long ago. Nobody knows exactly how old these pyramids are, but it is certain that they are not half as old as the famous pyramids of Egypt, which were built about five thousand years ago. These Egyptian pyramids were tombs of great kings, whereas those of Mexico were only bases for the temples where the people came to worship their gods.



MEXICAN PYRAMID



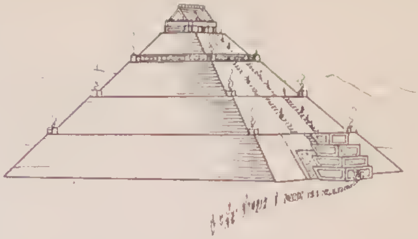
EGYPTIAN PYRAMID

The temple itself, perched high on the flat top of the pyramid, was the important part of the structure. It was usually made of wood, probably beautifully carved and painted. The base below it was only a huge mound of earth, covered with slabs of stone. The wooden temples have long since disappeared, but the earthen bases have lasted to this day.

It must have taken thousands of men many years to make one of these mounds. Their own homes were simple little huts with thatched roofs, but they felt that the house of the great god had to be big and beautiful. Towering high above the houses of the ordinary people, the temple was the most important building in the village, in the same way that the god was the most important of all persons.

The Indians did all they could to make the gods happy, so that in return these gods would answer their prayers. There were the rain god, the corn goddess, the god of war, and many others. Offerings were made to them and countless elaborate ceremonies were held in their honor. To some of them the people even offered human sacrifices, because they believed that a human life was the finest thing that they could give, and they wanted the gods to have the best.

A ceremony in honor of one of the gods must have been an interesting sight. Down the long highway toward the pyramid



RESTORATION OF MEXICAN PYRAMID

came the procession of priests and worshipers, the priests clad in black and their faces and bodies painted black. They wore beautiful headdresses of plumes, which waved in the breeze as the procession moved along. Up the steep sides of the pyramid they climbed, chanting as they went. And there in the temple at the top they made their offering to the god, praying that in return he would give them victory in battle or rain for their crops, as the case might be.

In the holy city of San Juan Teotihuacan are three of the most famous pyramids of Mexico, dedicated to the Sun, to the Moon, and to Quetzalcoatl, who was one of the favorite gods. His name means "Feathered Serpent," and one can see his symbols—the head of a serpent with a collar of feathers around its neck—carved on the pyramids built in his honor.

This little figure is a drawing of the god, Quetzalcoatl, taken from one of the books of the Aztec Indians. The Aztecs had a kind of writing made up of small pictures, and their paper was made from reeds or from the leaves of the century plant. For more information about Quetzalcoatl, read Field Museum Story No. 3, Series XXXIII, *The Quetzal—Sacred Bird of the Aztecs.*

ELIZABETH McM. HAMBLETON
Raymond Foundation

NOTE: There is a model of the Pyramid of Quetzalcoatl in Hall 8.

This page is for your own notes and illustrations

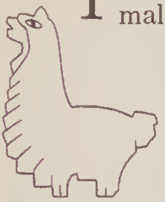
FIELD MUSEUM STORIES

Humpless Camels of South America

Series XXXV, No. 3
October 19, 1940

Looseleaf No. 30

HUMPLESS CAMELS OF SOUTH AMERICA



IN HIGH mountain regions such as the Andes large animals are few, but two, the llama and the alpaca, are especially well fitted for living on the windswept tablelands and ledges, from ten to sixteen thousand feet above sea level. Plant food is surprisingly abundant on these lofty ranges and so these members of the camel family have prospered in such places. Though they lack humps for storage of fat, they possess queerly constructed stomachs for storing water. Their sharp hoofs and spreading toes enable them to cling to the steep mountain ledges, and their long necks, cleft lips, and hard teeth are all remarkably well adjusted for gathering and chewing the hard upland grasses and other vegetation.

The llama and the alpaca are known only as domesticated animals. They vary in size and color. Alpacas may be black, white, or brown, but llamas, in addition to these three colors, may be steel-colored, roan, or gray. They are rarely all one color, however, usually being spotted or blotched. The wild relatives of the llama and alpaca—the vicuña and guanaco—are light brown in color, changing into white on the under side of the body.

In Inca days llamas were seldom used as food because they were more valuable for other purposes. The Incas, having no other large beasts of burden, used llamas as pack animals.

Photograph by Martin Chambl, Jr.

A LLAMA PACK-TRAIN

These were grazed on the grassy uplands in large flocks, and the males were in constant use for transporting grain, cotton, wool, and other products over the high mountain passes. If not driven too hard llamas will carry a pack of about one hundred pounds twelve or fourteen miles a day. The Indian drivers urge the flocks forward by cracking short whips behind them, but the whips are seldom used on the llamas because they are gentle and usually willing to work.

The alpacas, close relatives of the llamas, are kept for their wool. The flocks do best and the animals produce finer wool when herded just below snow line, between fourteen and sixteen thousand feet above sea level. The fleece is long and the hairs are soft and fine. Shearing is done during the rainy season. At this time of year temperatures are not so extreme and the rain washes the skins of the sheared animals, improving both the quantity and quality of the wool for the next shearing. The alpacas are sheared first at the age of two and every two years thereafter. Llamas also supply the people with some wool, but this is so coarse that it is used only for weaving into twine or very rough cloth. The wool of the wild vicuña and guanaco is quite as valuable as that of the alpaca but it is not so abundant.

Photograph by Martin Chambl, Jr.

ALPACAS

Since the time of the Spanish Conquest llamas and alpacas have not been the only domesticated animals. Horses, mules, and burros have been introduced to carry burdens, and sheep and cattle are used to supply wool and meat. Horses do not do as well as the native animals in the highest mountains or over the roughest Andean roads. During the rainy season, when the roads are bad, llamas are again the sole beasts of burden. In spite of the animals introduced from Europe, llamas and alpacas are still kept in large numbers for their wool, hides, and meat, and for carrying packs, because they are so well suited to this difficult environment.

LOREN P. WOODS
Raymond Foundation

NOTE: The llama, alpaca, and vicuña may be seen in Hall 15 and the guanaco in Hall 16.

This page is for your own notes and illustrations

FIELD MUSEUM STORIES

Mummies from Egypt

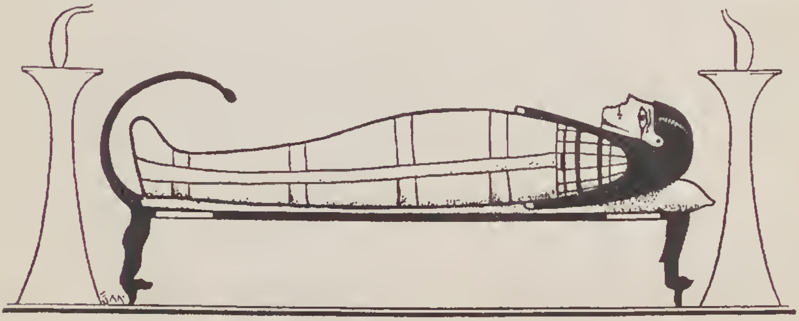
Series XXXV, No. 4
October 26, 1940

Looseleaf No. 31

MUMMIES FROM EGYPT

A museum visitor almost invariably asks to see Egyptian mummies; then after he gazes at them for a moment come the questions, "What is a mummy? How did they make it? And why?" A mummy is a body so treated and wrapped that it will be preserved for an indefinite length of time. The earliest Egyptian mummies (made about 4,000 years ago) were bodies of the kings and queens who believed that the next world would be very much like this one. They believed that whatever they used in this world they would also want in the future one. With this in mind they naturally thought the body would be very necessary; therefore it was carefully and expensively treated that it might have eternal personal identity. After a time these beliefs and customs were adopted by the wealthy people as well as the royalty.

No one knows exactly what was done to the bodies of these early kings, queens, and wealthy people; no doubt various treatments were given according to the importance and wealth of the person. As a rule the internal organs were removed and then the body was soaked in a salt or natron solution scented with herbs and spices. The length of the soaking depended upon how much money the deceased person had left for this purpose—the more money the longer the soaking. Then the body was filled with linen, rubbed with oil, wrapped in linen, and possibly covered with pitch or tar. A case was made of wood and covered with a plaster and linen mixture; on this case the face was painted, and writings, prayers, and symbolic pictures were sketched. Then the mummy was usually placed in another wooden case also decorated with paintings and writings. The mummy so wrapped and encased was then placed in a stone box called a sarcophagus. Finally the mummy was placed in a tomb. On the sarcophagus and on the walls of the tomb, prayers were written concerning



EGYPTIAN MUMMY

the person; usually some were supplications begging for long life, happiness, and plenty of food in the next world.

Along with the mummy in the tomb were placed objects which might be needed in the future—possibly a bed, chairs, clothing, lamps, rugs, games, paper, brushes, jewelry, combs, and other articles. Here was a chance for artists and other craftsmen to outdo themselves, to make skilfully the finest specimens of their kind, because these were to be used in everlasting life. The metal workers made delicate and intricate designs on the bracelets, rings, ear-rings, necklaces, and mirrors. Sandals were cut from leather or were woven from reeds and fibers. Lovely combs and fancy hairpins were fashioned for the women; small bottles and jars held their precious perfumes, oils, and lip color—yes, even in those early days women used red color on their lips and cheeks, and black and yellow around their eyes to make them look larger and brighter. Razor blades and tweezers were provided for the men. Pottery lamps with oil were there to supply light; jars held wine or water.

Besides all these objects for use in the future world, offerings of food were made by means of pictures on the walls of the tombs. Slaves slaughtered oxen and then offered great platters of meat, along with fruits, vegetables, bread, and wine. The spirits of all this food were supposed to go to the next world and take the place of the real food.

A book of the dead written on papyrus paper told the story of the person, his religion, his hopes for the future, his good deeds, and his daily life. These Egyptian writings can be read today.

Too often we look upon the mummies as curiosities of the past with no meaning or connection with the present; some of the customs and beliefs of these people seem rather strange and funny to us only because we do not understand them and because many of our beliefs and customs are different. However, the mummies, surrounded with a wealth of material and writings, help to explain the remarkable civilization of the early Egyptians.

MIRIAM WOOD
Raymond Foundation

NOTE: In Hall J, you will find mummies from Egypt and some of the many objects found in the tombs.

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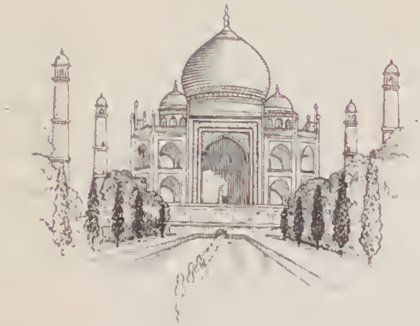
FIELD MUSEUM STORIES

The Taj Mahal

Series XXXV, No. 5
November 2, 1940
Looseleaf No. 32

THE TAJ MAHAL



About three hundred years ago, there lived an emperor in India who was known as Shah Jahan. He lived in a great and splendid palace, with a moat around it and a drawbridge over the moat.

There were many other beautiful buildings in his capital city of Agra. There were palaces of princes and lords, and great mosques, or Mohammedan churches, with high domes and slender towers called minarets. There were wide streets, with shops on either side. Many of the shops were kept by merchants from distant lands, who came to Agra because they knew that Shah Jahan's people had money to pay for the silks, jewels, and other beautiful things which they had to sell.

There were beautiful gardens in the city, too, with flowers, trees, and fountains. None was more lovely than those of Shah Jahan's palace. Here the emperor spent many happy hours with his wife, Arjumand Banu. People usually called her Mumtaz Mahal, which means "The Chosen of the Palace." Shah Jahan had married her long before he became emperor, and she had been with him constantly. Even when he went to war, she had followed, living with him in his soldier's tent.

When she became queen, she often helped her husband with wise advice about the government of his great empire. More often, no doubt, she talked with him of their sons and daughters, for they had fourteen children. They both enjoyed trees and flowers, and old stories say that sometimes they amused themselves with a contest to see who could plan the loveliest garden.

These happy times did not last many years. Not long after she became queen, Mumtaz Mahal died. It seemed to Shah Jahan then that it might help his grief and loneliness to build a monument by which people might remember his wife forever. He decided that her tomb should be the most beautiful building in the world.

So he sent for the best master-builders and artists of India and of other countries of Asia. It is said that one architect came from Venice, in Italy, and a goldsmith from far-away France. Then pictures of the most beautiful buildings in the world were given to these men to study and compare. They worked for many days to make a new plan which should satisfy the emperor. It must be something finer than any that had been constructed before. This was not to be a castle for fighting men, nor a place for working or buying and selling. It was to be all for dreams and memory, a building as graceful and charming as the queen herself. There must be no sharp lines, no hardness or heaviness of color or form, but softly curving, lightly lifting grace of pure white marble, with touches of bright and dainty color. At last, after long study and much thought, the men worked out a plan which pleased Shah Jahan, and made a small wooden model from which the masons, carpenters, and artists were to work.

Such a monument was not to be finished quickly, even though a powerful emperor paid some twenty thousand men to work on it daily. No one was hurried over this work which was to last for all time, for everything must be done carefully and perfectly. As the masons raised walls and arches and domes of finest white marble, goldsmiths and jewelers decorated them with inlays of red and brown carnelian and agate, blue lapis lazuli, and other precious stones. Many of the workers were famous artists.

Four men, famous for their skill in beautiful writing, designed borders of verses from the Koran, the Bible of the Mohammedan religion, in which the queen had believed. These were inlaid on the white walls in fine lines of black marble.

At last, after twenty-two years, the building was finished, inside and out. It stood in a marvelously beautiful garden, surrounded by a wall of red sandstone, and planted with the flowers and trees the queen had loved best. About the building were marble pools of clear water which reflected the great dome and slender minarets among floating lotus flowers.

In the high central chamber were placed two white cenotaphs, or false tombs, and below them, in a vault, was laid the queen's coffin. When Shah Jahan died, his body was placed beside hers.

Travelers to India still visit the lovely old city of Agra, to see the splendid buildings of the days of Shah Jahan. Above all, they admire the Taj Mahal, or tomb of Mumtaz Mahal. After three hundred years, it still reminds people, as the emperor intended, of the story of Shah Jahan and his love for his beautiful queen.

JUNE WORK*
Guide Lecturer, Raymond Foundation

NOTE: In Hall L of Field Museum is a model of the Taj Mahal.

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* This story is reprinted. It appeared originally on November 22, 1930.

This page is for your own notes and illustrations

FIELD MUSEUM STORIES

Rice Cultivation in China

Series XXXV, No. 6
November 9, 1940

Looseleaf No. 33

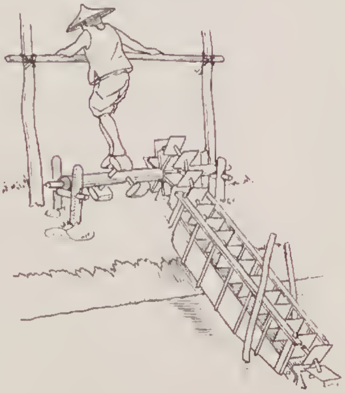
RICE CULTIVATION IN CHINA

For breakfast this morning, you probably ate some kind of cereal—corn flakes, wheat porridge, or perhaps oatmeal. There are eight different kinds of grasses called cereals and most of the people of the world depend upon one of these as their chief plant food. Here in the United States we use much wheat and corn. In Europe the important cereals are rye, barley, and oats while in parts of Africa sorghum and millet provide people with food. In the densely populated parts of southeastern Asia, where more than half the people of the world live, rice is the most important food. Rice yields six times as much food as a wheat crop which might be raised on the same piece of land.

Terraced rice fields

In some parts of south China, where severe winters are rare, the same field provides two harvests. From June to December during the rainy season a rice crop is raised, and from December to May, while it is warm but there is less rain, a crop of wheat, millet, or rape is grown on the same land.

Rice requires much moisture, so fields are usually flooded while the grain is growing. In South China three methods are employed to ensure an adequate supply of water: fields may be enclosed by little walls about a foot high which hold the rainwater on the soil; water may be pumped from streams and carried by canals to the fields; or rice fields may be planted in steps or terraces and watered from a pool or artificial lake in the hills above the highest field.


Pumping water to the rice fields

Pumps of many different shapes and sizes have been invented by the Chinese to convey water to their rice fields. Most of the pumps consist of a chain of paddles that are turned by a treadle. Usually the hired laborers or children or frequently even the adult members of a

Plowing with water buffalo

farmer's family will work on the pump for several hours a day during the rice-growing season.

Rice fields are plowed by the water buffalo, a big draft animal strong enough to drag the plow through the muck. The soil is finely raked until the field is a lake of ooze.

Seeds are sprouted before being planted, so they have already started to grow when they are placed in the ground. At first the rice is planted in a very small, especially prepared field. When it is about six inches tall it is transplanted in clumps into the larger flooded fields. From then until it matures there must be a level of about six inches of water maintained over the field. This means that the farmer and his help, usually the boys of the family, must pump water into the fields when they become dry, or must open the dikes and lower the water when the level has risen after heavy rains. When the rice crop is ripe, the dikes are opened and the fields drained. Then the plants are cut and threshed.

Because rice can be profitably farmed only in southwestern China, many Chinese do not eat rice except on holidays. People of northern China raise wheat, corn, and sorghum.

Rice has been grown in China for thousands of years. One account describes a ceremony performed in 2800 B.C. Thirty years ago the same rites were performed by the last Chinese emperor. Early in the year when the farmers were preparing the ground for spring planting, the emperor and four of his most exalted nobles planted five fields with the chief crops raised by the Chinese people. Prayers for a successful season and bounteous crops accompanied the planting. The emperor only planted the rice and the less important nobles planted the less important crops.

Transplanting rice

MARIE B. PABST
Raymond Foundation

NOTE: In Hall 25 are scenes illustrating the culture of rice, and in Halls G and H are dioramas of villages with nearby rice fields.

This page is for your own notes and illustrations

FIELD MUSEUM STORIES

Volcanoes

Series XXXV, No. 7
November 16, 1940

Looseleaf No. 34

VOLCANOES

AN ERUPTING VOLCANO

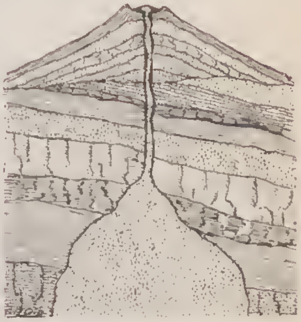
About 2,000 miles southwest of San Francisco, lie the Hawaiian Islands. These islands are really the tops of enormous volcanic mountains, built up from the bottom of the ocean. Centuries ago, great cracks appeared in the ocean floor where the islands now stand. From these openings poured streams of hot liquid rock or lava. When the liquid rock stream met the cool water the lava hardened. Slowly, over a period of many years, volcanic mountains were built from this rock until the tips rose above the ocean's surface and became islands, now known as the Hawaiian Islands. Constantly supplied by materials from inside the earth, these mountains grew, until today they stand, in some places, more than 13,000 feet above sea level. Most of these volcanoes have stopped erupting. Today the only active ones are on the island of Hawaii, the largest of the Hawaiian group. Here are to be found Mauna Loa, the largest active volcano in the world, and Kilauea, the "House of Everlasting Fire." Kilauea is a great crater filled by a red-hot mass of liquid rock, bubbling and boiling like soup in a kettle. Placid most of the time, Kilauea occasionally becomes destructive. In the lore of the Hawaiian people two stories of Kilauea have an important place. In 1790 an army was marching against King Kamehameha. Nothing stood in its path. Quite unexpectedly Kilauea overflowed its crater, destroying these enemies of the king.

A generation ago the seething lava again came to the top of the pit and overflowed. Great rivers of molten rock ran down the mountain side. Day by day this stream, several miles in width, descended slowly, covering and destroying every object in its path, and steadily making its way toward the ocean in the direction of the sea-port city of Hilo. Everything possible was done to turn aside this approaching foe, but without avail. By the time the lava was within a mile or two of Hilo, the Hawaiians, many of whom had lost their fields and homes, were on the verge of panic. They sent for the Princess Ruth, sister of the king. To quiet their fears she came to their aid, and with ceremony and cantations offered gifts and prayers to Pele, the goddess of the volcano, beseeching her to stop the terrible tide of destruction. The flow ceased the next day, a mile from Hilo, and a short distance from the ocean, although generally the lava proceeds until it enters the water.

The volcanoes of the Hawaiian Islands are, however, but a few of the many hundreds on the earth's surface. The most stupendous volcanic explosion of modern times occurred on the Dutch East Indies, when the great volcano on the island of Krakatoa, lying between Java and Sumatra, suddenly became active in 1883. The explosion was so great that over half of the island was blown away. The ash was thrown to a height of 17 miles and ships 1,600 miles away were covered with dust. The noise of the explosion was heard 2,000 miles away.

Less destructive, but perhaps better known, is the volcano Vesuvius in Italy. Before the year 79 A.D. Vesuvius was thought to be extinct, but before the close of that year a great eruption occurred which destroyed the city of Pompeii. During the eruption no lava was poured out; instead, dust and ash were thrown to great heights and carried long distances by the wind. Pompeii, at the foot of the mountain, was buried beneath thirty feet of ash.

What is it that makes a volcano erupt? Let us imagine that we could cut a volcano in half. At the very top would be the *crater*, the surface opening of the *cone*, out of which the lava flows. Leading from the crater down into the earth is the *neck* or throat of the volcano. Way down at the bottom of the neck we would probably see a large reservoir of molten rock called *magma*. This is the source of the materials that are thrown out of the volcano. The magma contains a great deal of gas. If there is an opening in the earth's crust through which the gas can escape unhindered, the eruption is quiet. If, however, the opening is blocked, the gases gather in large bubbles in the throat of the volcano and exert so much pressure that an explosion usually results.



MAGMA AND NECK
OF VOLCANO

BERT E. GROVE
Raymond Foundation

NOTE: In Hall 35 there is a model showing the parts of a volcano and some of the materials that have been erupted from a volcano.

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FIELD MUSEUM STORIES

The Wild Turkey
A Vanishing Game Bird

Series XXXV, No. 8
November 23, 1940

Looseleaf No. 35

THE WILD TURKEY, A VANISHING GAME BIRD

In the pioneer period of American life, wild turkeys roamed over wide areas from New England to Texas. They were sagacious birds, keenly sensitive to danger and able to run faster than the ordinary horse, and they challenged the attention of adventurous hunters. The well-flavored meat of the turkey was a welcome gift to any table and it is a part of the American tradition that the wild turkey was an important item in the feasts of the first Thanksgiving season.

As settlers moved westward and invaded the forests as well as the plains the natural home of the wild turkey was disturbed and even destroyed. Within a comparatively short time the handsome game bird had all but disappeared from the native wild life of the country. The variety of wild turkey found in Mexico has been domesticated and is now raised in great flocks.

The turkey is a woodland bird that needs a wide range of undisturbed forest and adjacent meadow, preferably a wet, swamp-like grassland. In the early morning and late afternoon a flock of turkeys may be seen searching in meadow or forest for the wild fruits and insects they prefer for their food, but during the middle of the day they may rest on the ground in the shadow of the forest or they may wander about. At night they fly into the trees and roost on the higher branches, safe from prowling enemies.

After the middle of February, when the mating season begins, the proud gobbler makes a fine show of his beautiful plumage. He spreads his tail fanwise and droops his wings to the ground to drag them along as he wheels and circles in and around the other members of the flock. He bobs his head up and down and makes a funny gobbling sound as he struts. That is how he gets the name "gobbler." Sometimes two gobblers will wage a bloody battle even to death and the victor tramples the vanquished under foot.

In late March or early April the turkey hen selects her nesting site at the foot of a tree or under a fallen log in the forest, or in a well-hidden spot in the meadow. She scratches out a shallow place, lines it with dry leaves and begins to lay her eggs. In about two weeks the nest will contain from eight to twelve cream-white eggs speckled with reddish-brown spots.

Then she sits on the nest constantly for about four weeks and at the end of that time the baby turkeys hatch from the eggs. The baby birds are covered with a soft down that dries in a short time, then they are ready to follow the mother in search of food.

The young birds usually return to the nest the first night but after that they settle wherever they happen to be at nightfall.

The first week of a turkey's life is very hazardous and often he does not survive. Wet feet are very serious and to be drenched by the dew-covered grass or by rain is almost sure to be fatal. Prowling animals in search of food are always a menace to the young turkeys, but if they survive the first summer they are large birds by the autumn season. During the late summer days they wander about, the young ones in the company of the turkey hens and the old gobblers somewhat apart. Occasionally a young one will stop to roll in the dust of the roadway to rid himself of vermin or to rub the scales from his growing feathers.

Where the turkey got his name is not known. Maybe it is from the repeated sound, "turk, turk, turk," that he sometimes makes. The Indians had other names for this game bird but whatever his name, we are all agreed that the turkey is one of the most desirable of game birds. It is hoped to again have him as a part of the native wild life in the regions that are his natural home and where once he was often seen.

LEOTA GREGORY THOMAS
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NOTE: In Hall 20 of Field Museum there is a habitat group of the Wild Turkey.

FIELD MUSEUM STORIES

Plants Are Natural Protectors Of the Hills

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PLANTS ARE NATURAL PROTECTORS OF THE HILLS

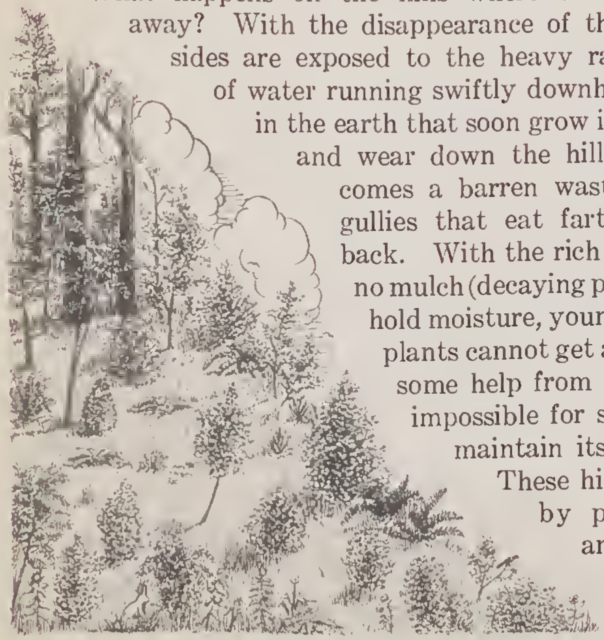
Forest-covered hills are naturally protected from soil erosion by the trees. Heavy rains falling through the treetops lose their force and reach the ground as gentle showers, or they trickle down the trunks of the trees, run off along the roots and sink into the earth. The precious soil is not washed away, and small tender plants can get a growing start.

The wide-spreading roots of the trees also hold the soil in place. This is very important, especially in winter when the particles of soil are loosened by freezing and thawing. If these particles are held in place by the roots of the trees and if the tops of herbs and grasses cover them, there is little danger of their being carried away.

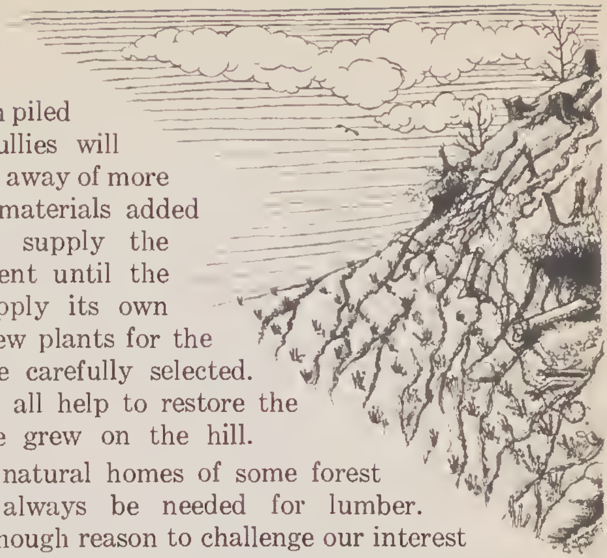
In the autumn when the falling leaves and the small plants decay they form a protecting mat over the ground that will hold the moisture and prevent the soil from washing away when the snows melt. It is important that this moisture should be held as a reserve water supply which can be drawn up through the roots of the plants and bring with it the food supply needed for their growth. The decayed leaves and other plant materials make humus in the soil, adding food materials to it about as fast as the growing plants use them.

What happens on the hills where the forests are cut away? With the disappearance of the trees the hillsides are exposed to the heavy rainfall. Streams of water running swiftly downhill cut pathways in the earth that soon grow into deep furrows and wear down the hillside until it becomes a barren waste of ridges and gullies that eat farther and farther back. With the rich topsoil gone and no mulch (decaying plant materials) to hold moisture, young trees and other plants cannot get a start. Without some help from man it is almost impossible for such a hillside to maintain its plant life.

These hills may be saved by planting shrubs and vines on the



A plant-covered hillside



A hillside after the plant life has been destroyed

steep slopes; brush piled in the deeper gullies will check the washing away of more soil; plant food materials added to the soil will supply the needed nourishment until the new life can supply its own needs; and the new plants for the hillside should be carefully selected. These things will all help to restore the forests that once grew on the hill.

Hills are the natural homes of some forest trees that will always be needed for lumber. That in itself is enough reason to challenge our interest in the saving of forested hills, and the restoration of trees to those hills that have been left barren by the removal of their plant life.

When roads are cut through a hill country the steep banks of the roadside should be protected. If shrubs and trees native to the region are planted the roadside need not be destroyed and the landscape will still be beautiful. An armful of brush or a mat of dead leaves or the planting of a young tree may change the story of a hillside from one of destruction to one of beauty and may make it a place of refuge for the wild animal life of the region.

Man has learned that plants are the natural protectors of the hills.

LEOTA GREGORY THOMAS
Raymond Foundation

NOTE: At the north end of Hall 29 you may see a reproduction of a natural woodland scene in Illinois.

This page is for your own notes and illustrations